## (19) World Intellectual Property Organization

International Bureau





(43) International Publication Date 15 July 2004 (15.07.2004)

PCT

## (10) International Publication Number WO 2004/057971 A1

(51) International Patent Classification<sup>7</sup>: 19/05

A23C 19/02,

(21) International Application Number:

PCT/NZ2003/000288

(22) International Filing Date:

22 December 2003 (22.12.2003)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

523394

24 December 2002 (24.12.2002) No

- (71) Applicant (for all designated States except US): FONTERRA CO-OPERATIVE GROUP LIMITED [NZ/NZ]; 103 Leonard Isitt Drive, Auckland Airport, Auckland (NZ).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): BHASKAR, Ganugapati, Vijaya, [NZ/NZ]; 115 Pacific Drive, Palmerston North (NZ). HAVEA, Palatasa, [TO/NZ]; 20B Wood Street, Palmerston North (NZ). ELSTON, Peter, [NZ/NZ]; 29 Hanmer Place, Palmerston North (NZ).

- (74) Agents: CALHOUN, Douglas, C., et al.; A J Park, 6th Floor Huddart Parker Building, Post Office Square, PO Box 949, 6015 Wellington (NZ).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

## Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: DAIRY PROTEIN PROCESS AND APPLICATIONS THEREOF

(57) Abstract: The invention provides a dried milk protein concentrate which has high denatured whey protein content and is calcium depleted. Processes for preparing the product are also provided. The product is useful in preparing cheese, particularly for reducing the formation of nuggets (thin protein rich gels of a different colour) in the cheese. In one embodiment the calcium content of a milk protein concentrate is reduced and whey proteins are denatured using heat treatment, prior to drying, to obtain the product.

